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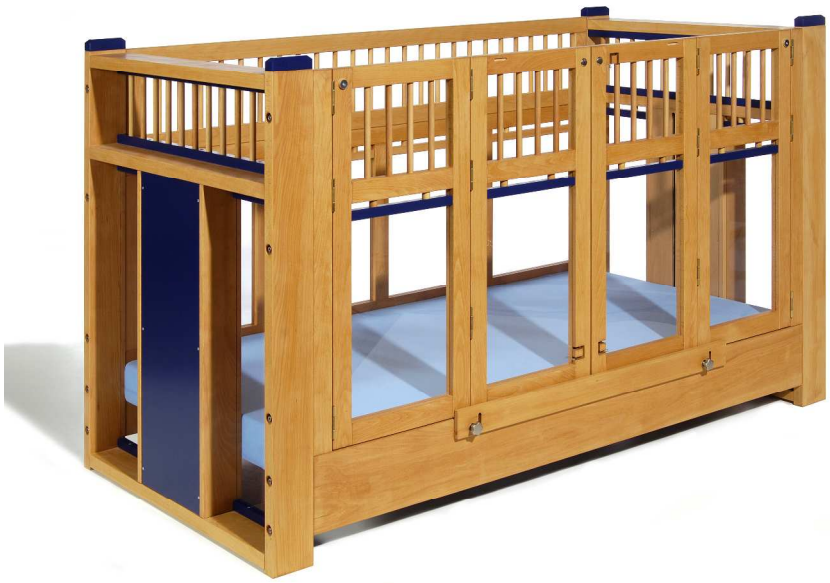
Operational Manual

Children's Therapeutic Bed

"LISA synchro"

(Door Height 102cm + Door Height 136cm)



Read carefully before operating!

This operational manual has to be provided to all users!

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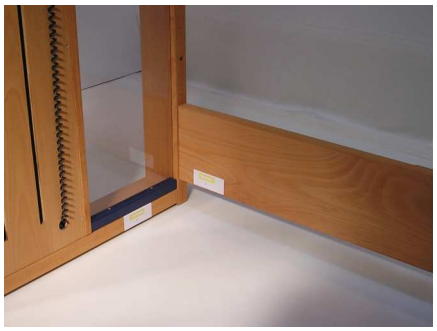
1. INSTALLATION MANUAL

The installation has to be carried out by trained specialized staff only. We recommend installation by two people following these steps:

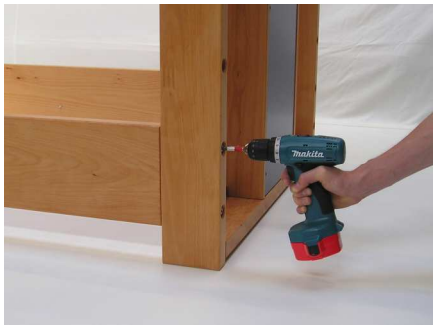
1.1 On the inner side of the bed there are stickers with numbered arrows from 1 to 4 (pict. 1). Assign the side panels, head- and foot-end according to these numbers.

Now screw side panels, head- and foot-end together according to the numbers by using the Allen screws (M8 x 130mm) attached (pict. 2)

Do not yet tighten the screws, leave some space to insert the rear panel!!!



picture 1



picture 2

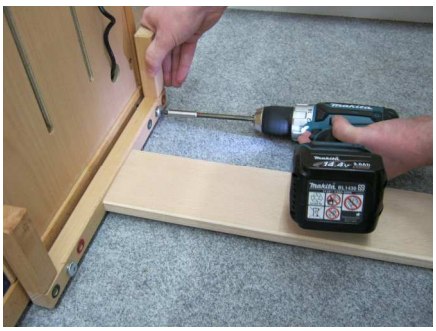
1.2 Fix the supporting plate for **steering + safety panel** to head-and food-end at the positions marked (pict. 3).

Width of bed 1000 mm = drilling in the MIDDLE
Width of bed 800 mm /head left = drilling **RED**
Width of bed 800 mm /head right = drilling **GREEN**

Connect the wires of the lifting columns' motor as well as the cable of the manual control with the steering unit (pict. 4.1)
For **models with electrically adjustable head- and foot-end** (Extra) connect the cable of the double-motor with the steering unit (pict. 4.2).

Mark of motor for the head-end = RED

Finally fix the safety-cover for the plugs.
Attention! Wires must not be damaged or crushed at any time during or after installation !!!



picture 3

picture 4.1

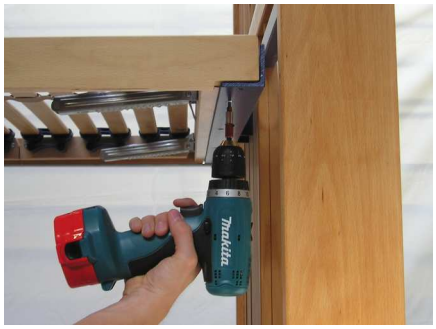
picture 4.2

1.3 At the rear install flat steel bars for the traverse joint of the L-angles of lifting columns, using the hexagonal screws (M8 x 10 mm) attached (pict.5)

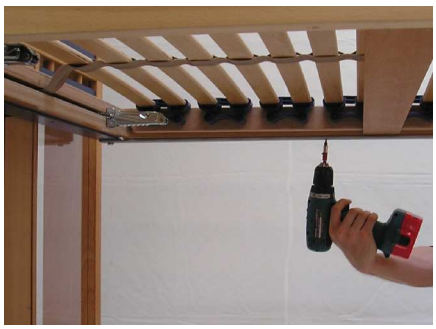
picture 5

After that place the bed base onto the L-angle + the rear traverse joint (pay attention the position of the head-end) and fix it with the wood-screws (4 x 25 mm) attached (pict. 5+6).

Thereby the L-angles always have to be in parallel position to the bed base. The frame of bed base has to be aligned with the L-angle (pict. 7).



picture 6

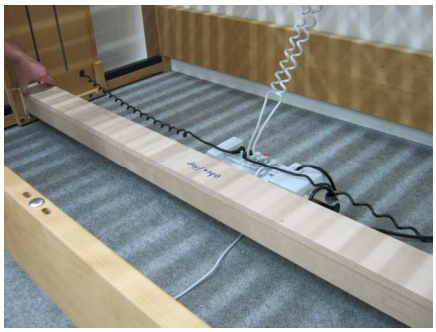


picture 7

1.4 The pre-installed roller blind is delivered in a plywood box. Put the plywood box in centre at the front-side inside the bed meeting the support (pict. 8).
For models with "doors on both sides" (EXTRA) place the second plywood box at the rear of bed meeting the support.

Pull the textile safety panel out of the plywood box, guide it around the aluminium-pipe and place it into the groove at the underside of bed base.

Fit the blind together with the angle wood into the groove. Then fix the angle wood by using the wood screws (3,5 x 20 mm) enclosed (pict.9).



picture 8

picture 9

1.5 The sides of the rear panel are marked with colours.

RED: left
GREEN: right
(looking from the door-side onto the bed)

Place lower part of rear panel between head- and foot-end according to the colour-marks and secure them with the Allen screws (M8 x 130mm) enclosed.

After that insert the enclosed wooden springs into the milled edge and place the upper part of the rear panel according to the colour-marks on top of the lower part and connect the two rear parts firmly by using the screws (M8 x 130mm) enclosed (pict. 12).

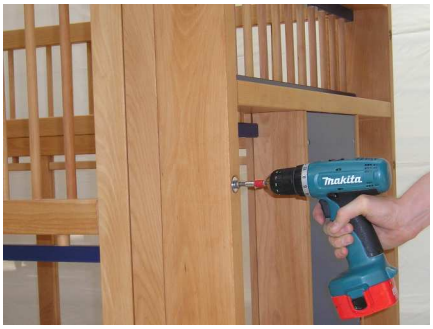
Now tighten all screws (including bed frame) firmly!!!

picture 12

1.6 The two units of doors are marked by colours:
RED: left
GREEN: right
(looking from the door-side onto the bed)

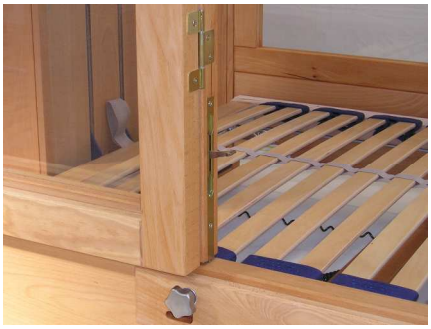
Fix the first unit of doors according to the colour-marks With the head- respectively the foot-end panel of the bed frame by using the screws (M8 x 130mm) enclosed (pict. 13).

Install second unit of doors accordingly (pict. 13).



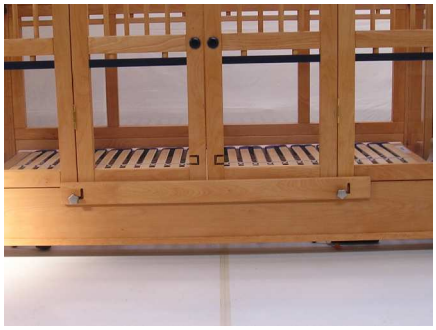
picture 13

1.7 The outer doors are locked respectively opened by a squared latch (pict. 14).
The middle doors are locked by a simple swing stopper. Simply move the handle along the groove to close or open the door (pict. 15).
There are two swing stoppers in the lower part of the doors, but one in the upper part (pict. 16).
Additionally the doors can be secured by a "transverse ledge" (pict. 16 + pict. 17).



picture 14

picture 15

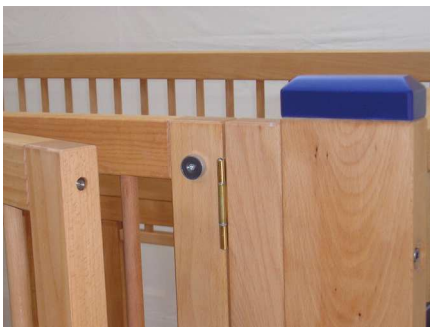


picture 16

picture 17

1.8 Blocking of Inner Doors

The inner doors are provided with magnets in order to avoid unintended shut (pict. 16).



picture 16

1.9 OPTIONAL: EXTRA

Head- and foot-end adjustable by electric motor.

Connect the wires of double-motor with the steering (pict. 17)

Mark of motor for the head-end = RED

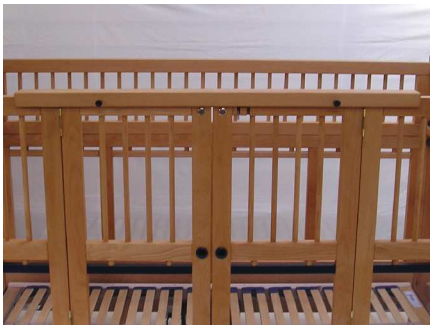
Then fit the cover protecting the plugs.

picture 17

1.10 OPTIONAL: EXTRA

Safety Catch of doors.

The doors can be additionally stabilized in the upper part by an U-shaped wooden ledge (pict. 18).
After placing the transverse ledge onto the doors according the moulded space in the upper frame of the two middle doors, turn the locking pin by 90° (it will be locked by suspension of the spring).
To unlock, pull the locking pin and turn it by another 90° into resting position.



picture 18

1.11 OPTIONAL: EXTRA

Transport Wheels

Double break castor 100 x 30mm.
To lock press down foot lever, to unlock pull it up.

Every time the bed had been moved into position all castors have to be locked firmly!

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2. OPERATING DIRECTIONS

2.1 Purpose of use

The children's therapeutic bed „LISA" is designed for private use at home as well as for domestic care. Its medical objective is to provide the alleviation, treatment and surveillance of illness and injuries by the various resting positions for the child. The multifunctional options increase the benefit. For safety reasons the bed is not for use for medical treatments using electricity, since this model is not conceived as a hospital bed. It is licensed for one (1) person only and the maximum weight-bearing capacity (see specification label) may not be exceeded. The bed is for indoor use only and has to be protected from high humidity. All technical functions can be controlled by a **lockable IPX4-manual switch**.

<u>All components of the bed are only permitted for use according to its intended purpose.</u>
<u>Overload may cause damage and is not permitted.</u>

2.2 Important notes for operational safety

I. Set-up and initial operation have to be carried out by authorized distributors. A functional test has to be carried out prior to handing the bed over to the customer. Attention has to be paid to: the smooth running of all functions, the installation of power supply according to the regulations, the firm installation of the lifting unit within the bed frame as well as the fixing of the bed base to the lifting unit. This also applies to further operation of the children's therapeutic bed.
Improper installation of mains connection may cause serious damage (electric shock) to people.

II. The maximum weight of the patient must not exceed 100 kg. People of any age with limited perceptive faculty may operate the system under supervision only.

III. The lowest position of the bed base is the safest position and should be used in any case, unless therapy and nursing require a different position.
After treatment always return the lifting unit to its lowest position.

IV. While moving the lifting unit make sure that no parts of the body get in or under the moving elements. **DANGER OF BEEING CRUSHED!**

V. The therapeutic bed for children **„LISA"** is designed for dry rooms and must be used and stored in such rooms only.
The system may only be operated by state-of-the-art 230 Volt plugs. Cables + plugs have to be dry. Make sure that cables are not crushed or do not rub against anything. Pay attention to the proper laying and fixing of all cables at the positions advised.

VI. To avoid overload and defects of the electric engine the power-on time must not exceed a maximum time of 2 minutes.

The electric adjustment for head- and foot-end must only be used for lowering/lifting upper body or legs of the patient (patient must be in proper position!).
Overload causes damage and is not permitted!!!

Also overloading the mechanical components causes damage and therefore is not permitted (see Operational Manual TOP 2.3 + 2.4 as well as specification label).

VII: Liability for any kind of damages and injuries is explicitly excluded in case of misuse, improper use, wrong operation or inexpert installation/repair. Furthermore all kinds of guarantees are also excluded in such a case.

VIII. The electric engines of the bed may not be used in locations where inflammable gases or fumes occur.

IX. The therapeutic bed „LISA" may only be operated and maintained by using original accessories and original spare parts.

X. Operational malfunction must be reported immediately to the authorized distributor. Stop using the equipment and disconnect the mains, especially when electrical or mechanical parts are damaged.

2.3 Warnings

I. Transport of the patient is only permitted in the lowest, horizontal position of the lifting unit.

II. While the patient is unattended the lifting unit has to be on its lowest position. Revolving doors have to be firmly locked.

III. Do not leave things behind in the bed that could be used for climbing up or can lead to suffocation or strangulation.

IV. The lifting unit must only be operated by people briefed or by the nursing staff. The patient must not operate the bed themselves. While the patient is unattended all functions have to be locked.

V. The patient's clinical condition may increase the danger of being squeezed in.

VI. DANGER OF BEING SQUEEZED IN when opening or closing the revolving doors. In an open state, the middle parts of the revolving doors are secured by magnets. The complete door units must only be opened + closed while the patient is under supervision.

VII. The therapeutic bed „LISA" must only be used upon even, horizontal and solid ground.

VIII. Use bed in dry rooms only.

IX. Do not place the bed near open fire or other strong heat sources (i.e. electric radiator, gas heater etc.).

X. Maximum safe weight-bearing capacity is 100 kg.
Electric adjustment of head- and foot-end (accessories) must only be used for lifting/lowering the upper body or the legs (Make sure the patient is in appropriate position).

2.4 Start-up the electric system – initialisation

Bring the bed base from any treatment position down to the lowest position. Therefore press the two lowest buttons of the manual control unit simultaneously. After approx. 10 seconds the lifting motors start to move the bed base downwards. During that procedure the functions LED on the left topside of the manual control unit flashes RED. After the bed base has reached the lowest position, keep pressing the two buttons of the manual control for further approx. 5 seconds until the functions LED has switched to GREEN. Now the system is initialised and ready to operate.

The initialisation has to be carried out every time before operating the system + after any power failure.

2.5 Lifting motors

The lifting motors serve the purpose of lifting the bed base up and down.

Maximum patient weight: 100 kg.
Safe working load: 170 kg, incl. equipment.

Overload will cause damage and therefore is not permitted.

2.6 Bed base

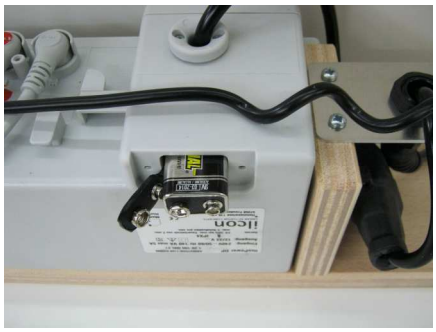
Standard equipment: manually adjustable head- and foot-end.

EXTRA: Accessories

Head- and foot-end adjustable by electric motor.

It is not recommended to move the head- and foot-end to the highest position at the same time. The patient may be cramped in and feel uncomfortable.

In case of power failure or defective motor head- and foot-end as well as the bed base can be lowered by battery (pict. 19).
There is enough energy for only one emergency lowering.
Exchange of the battery is essential after only one operation respectively with every maintenance.



picture 19

2.7 Manual Control Unit

While operating the electric adjustment no items and no limb is allowed in the moving area.

All electric functions can be operated by the manual control unit. The options of adjustment of height and positions of the base are marked by the corresponding symbols. By gently pressing the respective button the system moves to the required position. Attention: operate only one function at the same time.

Please pay attention that during operation the wire of the manual control unit is not crushed! To avoid malfunction do place the manual control unit onto the bed frame, when not in use. The key pad should be facing away from the bed.

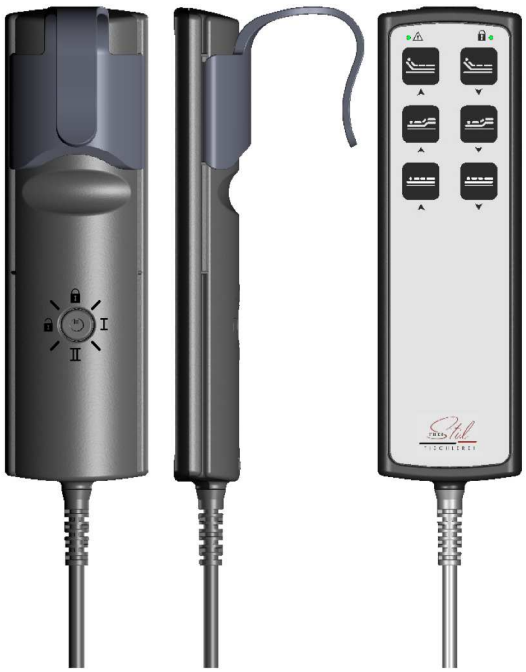
The control unit has a lock function: with a special key one can operate a rotary switch at the backside of the control unit. On the display of the key shows either an open lock(unblocked) or a closed lock (blocked).

The key is a safety element preventing unauthorized use of the manual control unit. Therefore it always has to be kept separate from the manual control.

On the following page you will find details on keys + a diagram of functions of the manual control unit:

Keys and Functions

Manual control unit with 6 buttons for adjustment of positions



All electric functions can be operated by the manual control unit. The options of adjustment of height and positions of the base are marked by the respective symbols. By gently pressing the respective button the system moves to the required position. Attention: operate only one function at the same time.

SYMBOL 'KEY'

Green LED	= Functions of control unit available
No LED	= Functions of control unit locked

SYMBOL 'YELLOW TRIANGLE'

Green LED	= Ready to operate
Red LED	= Error message (Check: disconnect the system from power, disconnect the battery, Reconnect the battery, check the plug-in conncections, plug in the system)

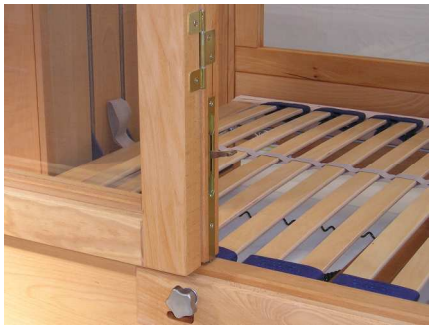
INITIALISATION	= Button 5 + 6 (hight adjustment) - press simultaneously
Red LED Flash	= During initialisation
Green LED	= Initialisation completed

The control unit has a lock function: with a special key one can operate a rotary switch at the backside of the control unit. On the display of the special key shows either an open lock(unlocked) or a closed lock (locked).

Symbol 'open lock'	= Ready to operate
Symbol "closed lock'	= Functions of control unit blocked

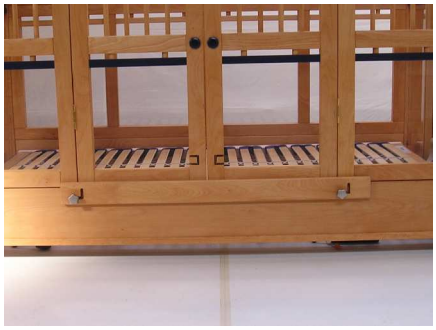
2.8 Revolving Doors

The outer doors are fixed and opened by a squared latch (pict. 20). The doors in the middle can be locked by an easy to handle swing stopper. Just move the hand-lever along the groove in order to open or to close the doors (pict. 21). There are 2 swing stoppers in the lower part and 1 swing stopper in the upper part of the doors. The doors can be additionally secured by a movable ledge (pict. 22), and, if requested, stabilized by an U-shaped wooden bolt **(EXTRA)** across the upper part of the doors (pict. 23). It will be locked by suspension of the locking pin.

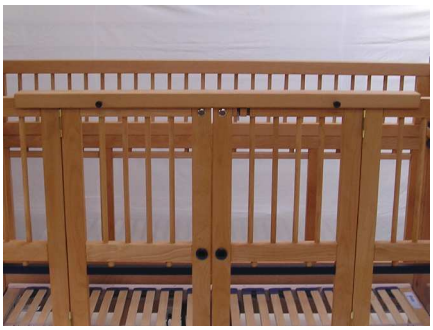


picture 20

picture 21



picture 22



picture 23

2.9 Transport Wheels

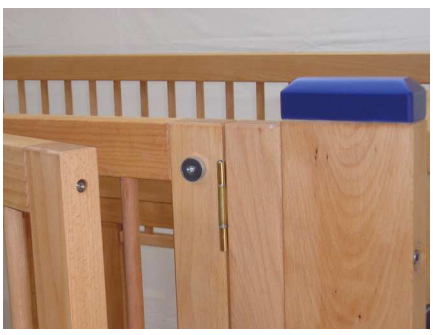
EXTRA: Accessories

Break castor wheels 100 x 30mm, double break function.
To lock press down foot lever,
to unlock pull it up.

Every time the bed had been moved into position all castors have to be locked firmly!

2.10 Blocking of Inner Doors

The inner doors are provided with magnets in order to avoid unintended shuting (pict. 24.)



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2.11 Cleaning, Maintenance and Re-use

The polished surface ensures easy cleaning and disinfection. Neither the electric equipment nor the bed frame should be cleaned by high pressure cleaning equipment. For cleaning, use a damp cloth and a little neutral soap, dry afterwards using a dry cloth.

Disinfection of the bed with a commercially available disinfecting agent is possible.
Re-use is possible after proper cleaning, disinfection and maintenance.

Maintenance must be carried out by the authorized distributor. A check up on all functions should be done prior to re-use of the bed or at the patient's house when the bed had been on long-term use. A 2-years period for check ups on all components is obligatory.

Spare part lists available from the manufacturer!

2.12 EXTRAS

Nursing mattress type „Grisu", flame-retardent

Retouching pen for metal frame

Set for surface treatment of the wooden parts

2.13 Symbols

Protection class II

Use in dry rooms only

Danger of being squeezed or crushed

Important notice in Operating Directions

Application part Type B

Manufacturer: FreiStil Tischlerei Kroh + Kinstler GmbH & Co. KG
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3. TECHNICAL DETAILS

3.1 Bed Frame

Exterior dimensions:	1.076 x 2.230 mm
	876 x 1.950 mm
Interior dimensions:	1.000 x 2.000 mm
	800 x 1.700 mm
Height of bed:	1.658 mm
Top level of mattress	320 – 1.020 mm
Height of doors:	1.020mm + 1.360 mm
Weight of Bed frame + Lifting unit (Door height 136cm)	approx. 245 kg
Weight of:	
Head- and foot-end panel	90 kg
Side panels	20 kg
Rear part incl. bars or spectar®	35 kg
Revolving doors	50 kg
Total weight of bed frame:	approx. 195 kg
Mattress standard:	RG35 12 cm, approx. 5 kg

3.2 Lifting Unit: ilcoDrive BZ ICS

Dimensions (length x width x height):	130 x 71 x 22 cm
Weight	approx. 15 kg
Lifting width	700 mm
Lifting capacity	2 x 3000N

3.3 Steering Unit: ilcoPower TD ICS

Mains voltage	240 VAC / 50-60 hz
Sockets	4 motors / 1 manual control unit
Protective class	II

3.4 Bed base: M+K Holztechnik „JUMBO II“

Dimensions	96 x 195 cm
Number of pieces	2
Weight	approx. 30 kg
Maximum weight bearing capacity	100 kg

3.5 Engines: **ilcoFlexx 581 ICS**

Mains voltage / frequence	240 volt / 50-60 hz
Engine voltage	24 volt
Protective class	II
Sound output	38 dB (A)
Term of operating	max. 2 min / 5 cycles per min

Technical Details may be subject to alterations!

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4. ANNEX

4.1 Maintenance Instructions / CHECK LIST

With this maintenance instructions we will enable you to carry out the requested safety and technical check-ups as requested by REGULATIONS for USERS of MEDICAL PRODUCTS, Germany (MPBetreibV). Further regulations/laws of the legislator or professional organisations are not covered.

The **instructions** are structured as following:

4.1.1 General Notes

- Maintenance and repair works may be carried out by qualified and authorized personnel only. *(The manufacturer of the electric motor requests an individual authorisation of the personnel given by himself in order to entitle them for repair works!)*

- Maintenance

  electrical equipment every 12 months
  Regular inspection of electric resistor and leakage current according to VDE 751-1, using a gauge manufactured i.e. by Bentron, Mertens or equal.

  mechanical components every 12 months

  Maintenance inspections may be carried out at site of installation. Further repair works have to be carried out at suitable work stations.

- Only original spare parts are permitted. Self-made components will make expire any liability or guarantee by the original manufacturer.
  List of spare parts is available from the manufacturer.

- Alterations in the system, modifications and /or extensions require the prior written approval by the manufacturer.

- There has to be run a complete functional test after each and every maintenance and/or repair. Pay attention to all moving parts running without collision in order to avoid any kind of hazards to patient and others as well as damages to the material and the components.

- In order to enable you to document your work we enclosed provide some **CHECK-LISTS** to tick off.
  Further check-ups necessary, i.e. according to accident prevention rules released by the professional association or any accident prevention association etc. remain in force without limitation.

4.1.2 CHECK LIST / Electric Motors

Serial Number	Year of Manufacture
----------	----------
Last Inspection	Next Inspection
----------	----------

		yes	no
1.	**Are all cables functioning properly?** Check, if there is any damage. (bruises, cracks, disruption, knots etc.)	--------	--------
2.	**Strain relief working?** Check on motor and lifting unit.	--------	--------
3.	**Are cables correctly laid?** Check on cable run.	--------	--------
4.	**Any traces of liquids?** Check if liquids reached the motor.	--------	--------
5.	**Engine-case undamaged?** Check whether there are any cracks.	--------	--------
6.	**Manual switch undamaged?** Check if it shows any cracks.	--------	--------
7.	**Electric control unit okay?** Check connections.	--------	--------
8.	**Is the lifting motor running smoothly?** Check all positions. (Does it stop accordingly at the final positions?)	--------	--------
9.	**Is the motor moving the bed base running smoothly?** Check all positions. (Does it stop accordingly at the final positions?)	--------	--------
10.	**Exchange of battery for emergency lowering.** (see 2.5 “Bed Base” on page 08 of this manual)	--------	--------

Date	Inspected by
----------	----------

Stamp / Signature

FREI Stil
TISCHLEREI

4.1.3 CHECK LIST / Bed base

Serial Number	Year of manufacture
---	---
Last Inspection	Next Inspection
---	---

	yes	no
1. Height tolerance okay? Check if the bed base is in horizontal state in every position possible.	---	---
2. Connection between lifting motors and bed base okay? Check the four ball bearing sockets and their four screws.	---	---
3. Adjustment of head-end working? Check on the mechanical emergency function.	---	---
4. Adjustment of foot-end working? Check on the grid.	---	---
5. Bed base okay? Check the function of the bed base and if there are any damages.	---	---
6. Safe distance between bed base and bed frame sufficient? Distance must be at all points < 25mm.	---	---
7. All screws tight? Check quantity of screws and whether they are firmly fixed.	---	---

Date	Inspected by
---	---
Stamp / Signature	

4.1.4 CHECK-LIST / Bed frame

Serial Number	Year of Manufacture
---	---
Last Inspection	Next Inspection
---	---

	yes	no
1. Wooden parts okay? Check wooden frame and décor. Do they show any cracks or distortion.	---	---
2. Connections of side panels, rear panel + doors and head-/foot-end? Check on all countersunk screws.	---	---
3. Wooden bars and „SPECTAR®" okay? Check especially the **„SPECTAR®"** screens for any damage.	---	---
4. All locks of doors okay? Check whether all locks are easy to move.	---	---
5. Transport wheels okay? Check on function and whether they are fixed tightly.	---	---

Date	Inspected by
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Stamp / Signature
